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PETITION FEE
Under 37 CFR 1.17(f), (g) & (h)
TRANSMITTAL
(Fees are subject to annual revision)

Send completed form to: Commissioner for Patents
P.O. Box 1450, Alexandria, VA 22313-1450

Application Number	**10/828,306**
Filing Date	**April 21, 2004**
First Named Inventor	**Ryoji FURUHASHI et al.**
Art Unit	**2186**
Examiner Name	**Not yet assigned**
Attorney Docket Number	**501.43789X00**

Enclosed is a petition filed under 37 CFR 1.102(d) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of $ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

Payment of Fees (small entity amounts are NOT available for the petition (fees)

☒ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. 50-1417:
☐ petition fee under 37 CFR 1.17(f), (g) or (h) ☒ any deficiency of fees and credit of any overpayments
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Petition Fees under 37 CFR 1.17(f): **Fee $400** **Fee Code 1462**
For petitions filed under:
§ 1.53(e) - to accord a filing date.
§ 1.57(a) - to according a filing date.
§ 1.182 – for decision on a question not specifically provided for.
§ 1.183 – to suspend the rules.
§ 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
§ 1.741(b) – to accord a filing date to an application under §1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g): **Fee $200** **Fee code 1463**
For petitions filed under:
§1.12 - for access to an assignment record.
§1.14 - for access to an application.
§1.47 - for filing by other than all the inventors or a person not the inventor.
§1.59 - for expungement of information.
§1.103(a) - to suspend action in an application.
§1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
§1.295 - for review of refusal to publish a statutory invention registration.
§1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
§1.377 – for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
§1.550(c) – for patent owner requests for extension of time in ex parte reexamination proceedings.
§1.956 – for patent owner requests for extension of time in inter partes reexamination proceedings.
§ 5.12 – for expedited handling of a foreign filing license.
§ 5.15 – for changing the scope of a license.
§ 5.25 – for retroactive license.

Petition Fees under 37 CFR 1.17(h): **Fee $130** **Fee Code 1464**
For petitions filed under:
§1.19(g) – to request documents in a form other than that provided in this part.
§1.84 – for accepting color drawings or photographs.
§1.91 – for entry of a model or exhibit.
§1.102(d) – to make an application special.
§1.138(c) – to expressly abandon an application to avoid publication.
§1.313 – to withdraw an application from issue.
§1.314 – to defer issuance of a patent.

Name (Print/Type)	**Frederick D. Bailey**	*Registration No. (Attorney/Agent)*	**42,282**
Signature		*Date*	May 18, 2005

Docket No.: 501.43789X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:

Ryoji FURUHASHI et al.

Serial No. 10/828,306

Filed: April 21, 2004

For: INFORMATION PROCESSING SYSTEM AND MANAGEMENT DEVICE

PETITION TO MAKE SPECIAL
UNDER 37 CFR §1.102(MPEP §708.02)

May 18, 2005

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants hereby petition the Commissioner to make the above-identified application special in accordance with 37 CFR §1.102(d). Pursuant to MPEP §708.02(VIII), Applicants state the following.

(A) This Petition is accompanied by the fee set forth in 37 CFR §1.17(h). The Commissioner is hereby authorized to charge any additional payment due, or to credit any overpayment, to Deposit Account No. 50-1417.

(B) All claims are directed to a single invention. If the Office determines that all claims are not directed to a single invention, Applicant will make an election without traverse as a prerequisite to the grant of special status.

(C) A pre-examination search has been conducted.

The search was directed to the invention set forth in claims 1-20 in the above-referenced application. The invention is directed, at a minimum, to an information processing system including: at least one computer device and at least one storage device having a plurality of physical storage regions for storing data used by the at least one computer device, physical storage region characteristics managing means for managing the level of storage characteristics provided by each of the plurality of physical storage regions; data storage destination managing means for managing associations between the plurality of physical storage regions and the data stored in each physical storage region; characteristics change managing means for managing the previously determined temporal change in the level of the storage characteristics required of the storage destination physical storage region by the data managed by the data storage destination managing means; and movement instructing means for acquiring, at prescribed times, the level of storage characteristics in the storage destination required by the data at that time, for each data item managed by the data storage destination managing means, further acquiring the level of storage characteristics of the physical storage region in which the data is actually stored, from the physical storage region characteristics managing means, comparing the respective levels, and issuing an instruction to the storage device for the data to be moved to the physical storage region providing the required storage characteristics.

The search of the above features was conducted in the following areas: class 707, subclasses 2 and 205, class 709, subclass 226 and class 711, subclasses 114, 117, 165 and 170.

Additionally, a computer database search was conducted on the USPTO system EAST.

(D) The following is a list of the references deemed most closely related to the subject matter encompassed by the claims:

U.S. Patent Number	Inventors
5,893,139	KAMIYAMA
6,032,224	BLUMENAU
6,189,001	MCGOVERN et al.

U.S. Patent Publication No.	Inventor(s)
2002/0144076	YAMAMOTO et al.
2003/0225801	DEVARAKONDA et al.
2003/0229698	FURUHASHI et al.
2004/0123180	SOEJIMA et al.
2004/0243692	ARNOLD et al.
2005/0027754	GAJJAR et al.

A copy of each of these references (as well as other references uncovered during the search) is enclosed in an accompanying IDS.

(E) It is submitted that the present invention is patentable over the references for the following reasons.

It is submitted that the cited references, whether considered alone or in combination, fail to disclose or suggest the invention as claimed. In particular, the cited references, at a minimum, fail to disclose or suggest comparing the level of the storage characteristics of a storage destination required by the data at a particular time, for each data item, at prescribed times, on the basis of the timing thus established, with the level of the storage characteristics of said physical storage region in which said data is actually stored, and/or if said levels are not matching, then sending an instruction for said data to be moved to said physical storage region providing said required storage characteristics, to the storage device having said physical storage region in which said data is actually stored.

All of the independent claims recite at least one of these features or this feature, if there is only one. In particular, independent claim 1 recites acquiring the level of storage characteristics in the storage destination required by the data at a prescribed time, for each data item managed by said data storage destination managing means, and acquiring the level of storage characteristics of said physical storage region in which said data is actually stored, and comparing said respective levels, and issuing an instruction to said storage device for said data to be moved to said physical storage region providing said required storage characteristics. Independent claim 11 recites comparing the level of the storage

characteristics of a storage destination required by the data at a particular time, at prescribed times, for each data item, with the level of the storage characteristics of said physical storage region in which said data is actually stored, and if said levels are not matching, then it sends an instruction for said data to be moved to said physical storage region providing said required storage characteristics, to the storage device having said physical storage region in which said data is actually stored. Independent claim 17 recites comparing said storage characteristics level required by said data at a particular time, with said storage characteristics level of said physical storage region in which said data is actually stored, at prescribed times, in accordance with previously established temporal change in said level of storage characteristics required of the storage destination physical storage region by said data, and judging whether or not said levels are matching; and instructing said data to be moved to a physical storage region having said storage characteristics level required by said data at that time, if said judgment result indicates that the levels are not matching. Independent claim 18 recites movement instructing means for acquiring, at prescribed times, the level of storage characteristics in the storage destination required by the data at that time, for each data item managed by said data storage destination managing means, from said characteristics change managing means, further acquiring the level of storage characteristics of said physical storage region in which said data is actually stored, from said physical storage region characteristics managing means, in accordance with information for said logical storage region associated with said data in said data storage destination

managing means, and information relating to the association between the logical storage regions and the physical storage regions managed by said storage device, comparing said respective levels, and issuing an instruction to said storage device for the logical storage region in which said data is stored to be moved to said physical storage region providing said required storage characteristics. Independent claim 20 recites comparing the level of the storage characteristics of a storage destination required by the data at a particular time, for each data item, at prescribed times, on the basis of the timing thus established, with the level of the storage characteristics of said physical storage region in which said data is actually stored, and if said levels are not matching, then it sends an instruction for said data to be moved to said physical storage region providing said required storage characteristics, to the storage device having said physical storage region in which said data is actually stored.

The references considered most closely related to the claimed invention are briefly discussed below:

U.S. Patent No. 5,893,139 (Kamiyama) shows a storage system having a plurality of physical storage regions, physical storage region characteristics managing means, characteristics-change managing means, and movement instructing means to move data according to the characteristics of the physical storage and the characteristics of the data to be stored. The storage system further has logical/physical mapping information storing means that is updated after movement. The storage characteristics include access speed and

frequency. (See, e.g., Abstract, Figures, column 4, lines 28-45 and 59-65, column 5, lines 7-49, and column 7, line 60, through column 8, line 29.) However, unlike the present invention, Kamiyama does not show that the required storage characteristics for the stored data are previously determined.

U.S. Patent 6,032,224 (Blumenau) shows a system for managing a plurality of physical storage units with different access speeds including logical/physical mapping information storing means with associations between the logical storage regions and the physical storage regions, and data movement means, such that the logical/physical mapping information is updated to correspond to associations after movement. (See, e.g., Abstract, Figures, column 3, lines 13-65, and column 5, lines 5-49.) Unlike the present invention, Blumenau does not show the existence of a previously determined temporal change in the level of storage characteristics required by the stored data.

U.S. Patent No. 6,189,001 (McGovern et al.) discloses a storage system with a plurality of physical storage regions, physical storage region characteristics managing means, characteristics change managing means, and movement instructing means to move stored data. (See, e.g., Abstract, Figures, and column 7, lines 1-23.) Unlike the present invention, McGovern et al. do not show logical/physical mapping information storing means that gets updated after movement of data.

U.S. Patent Publication No. 2002/0144076 (Yamamoto et al.) discloses a storage device with a plurality of physical storage regions and a logical/physical mapping information storing means with associations between the logical storage data and the physical storage regions and data movement means, such that the logical/physical mapping information gets updated upon movement of data. (See, e.g., Abstract, Figures, and paragraphs 20, 44-49, 146, 147, 149, and 154.) In contrast to the present invention, Yamamoto et al. do not show a previously-determined temporal change in the level of storage characteristics of the stored data nor do they mention a comparison action triggered at prescribed times.

U.S. Patent Publication No. 2003/0225801 (Devarakonda et al.) shows a storage system including a plurality of physical storage regions, physical storage region characteristics managing means, characteristics change managing means, and movement instructing means. The system includes maps for a specific combination of logical attributes associated with specific data. (See, e.g., Abstract, Figures, and paragraphs 22, 23, 25, 36, 52, and 72.) Unlike the present invention, Devarakonda et al. do not show comparing means between the required storage characteristics and the provided storage characteristics nor do they disclose the change in the logical/physical mapping means upon movement of data.

U.S. Patent Publication No. 2003/0229698 (Furuhashi et al.) shows a data allocation method between a plurality of physical storage regions having

physical storage region characteristics managing means, characteristics managing means required by the data to be allocated, and data storage destination managing means that creates associations between physical storage regions and logical storage data. (See, e.g., Abstract, Figures, and paragraphs 15, 17, 38, 40, 44, 45, 55, and 78.) However, unlike the present invention, Furuhashi et al. do not show a previously determined temporal change in the level of storage characteristics of the stored data, nor do they disclose a movement instructing means to change the location of the data after being allocated.

U.S. Patent Publication No. 2004/0123180 (Soejima et al.) shows a storage apparatus with a plurality of physical storage regions, physical storage characteristics managing means, characteristics change managing means, and movement instructing means to move stored data based on the required level of storage characteristics in comparison to the provided level of storage characteristics. The comparison is effected at prescribed times. (See, e.g., Abstract, Figures, and paragraphs 72, 73, 77, 78, and 121.) In contrast to the present invention, Soejima et al. do not show the stored data having a previously-determined level of storage characteristics changing with time, nor do they show the existing logical/physical mapping means being updated as a result of data movement.

U.S. Patent Publication No. 2004/0243692 (Arnold et al.) discloses a method of allocating storage resources between a plurality of physical storage regions including a physical storage region characteristics managing means, characteristics change managing means for previously determined user-defined storage characteristics, and movement instructing means to move stored data after comparing the required storage characteristic with the provided storage characteristic by the physical storage region. The comparison is affected periodically. The system includes physical/logical mapping means. (See, e.g., Abstract, Figures, and paragraphs 21, 23, 24, 26, 28, 37, 40, and 42.) However, unlike the present invention, Arnold et al. do not show that the predetermined required storage characteristic changes in time, nor do they disclose the change in the logical/physical mapping means according to the data movement.

U.S. Patent Publication No. 2005/0027754 (Gajjar et al.) shows a system for storage management wherein the system includes a plurality of physical storage devices, characteristics change managing means, data storage destination managing means that creates mapping between logical and physical storage regions, and movement instructing means to move stored data when the storage characteristics levels do not meet the required levels. (See, e.g. Abstract, Figures, and 30, 32, 34, 44, 46, 47, 53, and 57.) Unlike the present invention, Gajjar et al. do not disclose the comparison of the required and provided levels of storage characteristics to be done at prescribed times, nor do

they show the change in the logical/physical mapping means upon the instructed movement.

Therefore, since the references fail to disclose comparing the level of the storage characteristics of a storage destination required by the data at a particular time, for each data item, at prescribed times, on the basis of the timing thus established, with the level of the storage characteristics of said physical storage region in which said data is actually stored, and/or if said levels are not matching, then sending an instruction for said data to be moved to said physical storage region providing said required storage characteristics, to the storage device having said physical storage region in which said data is actually stored, it is submitted that all of the claims are patentable over the cited references.

CONCLUSION

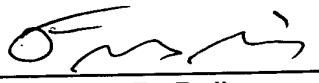
Applicant has conducted what it believes to be a reasonable search, but makes no representation that "better" or more relevant prior art does not exist. The Patent Office is urged to conduct its own complete search of the prior art, and to thoroughly examine this application in view of the prior art cited herein and any other prior art that the Patent Office may locate in its own independent search. Further, while Applicant has identified in good faith certain portions of each of the references listed herein in order to provide the requisite detailed discussion of how the claimed subject matter is patentable over the references, the Patent Office should not limit its review to the identified portions but rather, is

urged to review and consider the entirety of each reference, and not to rely solely on the identified portions when examining this application.

In view of the foregoing, Applicant requests that this Petition to Make Special be granted and that the application undergo the accelerated examination procedure set forth in MPEP 708.02 VIII.

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.



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